

Power, Performance & Perfection!

The CMX Series Material & Coating Thickness Gauges

ELECTRONIC PLATFORM (What's inside the box):

- ▶ Powered by a 100MHz DSP platform using FPGA technology.
- ▶ Two Channels - Dual pulsers and receivers.
- ▶ Up to 140Hz pulse repetition rate.
- ▶ Display update rate of 25 times per second.
- ▶ Adjustable gain settings - vlow, low, med, hi, vhi.
- ▶ Automatic gain control (AGC).
- ▶ Time corrected gain (TCG).
- ▶ Massive data storage (32 Megabit of non-volatile RAM).

FEATURES:

- ▶ Measurement modes: Pulse-Echo, Pulse-Echo w/Coating, Pulse-Echo w/Temperature Compensation, Echo-Echo, Echo-Echo Verify & Coating Only.
- ▶ Automatic: probe zero, probe recognition, and temperature compensation.
- ▶ Stores up to 64 custom setups for specific applications.
- ▶ High Speed Scan of up to 50 readings per second.
- ▶ Audible/visual alarm with hi and lo limit settings.
- ▶ Built-in differential mode for QC inspections.
- ▶ Time based B-Scan feature for cross section material scans.
- ▶ Data storage formats: Alpha numeric grid and sequential w/auto identifier.
- ▶ Windows PC software included.
- ▶ 2 year limited warranty.



Physical

Size:

Width (2.5in/63.5 mm)
Height (6.5 in/165 mm)
Depth (1.24 in/31.5 mm)

Weight:

13.5 ounces (with batteries).

Keyboard:

Membrane switch pad with twelve tactile keys.

Operating Temperature:

14 to 140F (-10C to 60C)

Case:

Extruded aluminum body with nickel-plated aluminum end caps (gasket sealed).

Data Output::

Bi-directional RS232 serial port.
Windows® PC interface software.

Display:

1/8in VGA grayscale display (240 x 160 pixels). Viewable area 2.4 x 1.8in (62 x 45.7mm). EL backlit (on/off/auto).

Ultrasonic Specifications

Measurement Modes:

Coating Off: Pulse-Echo (P-E)

Coating On: Pulse-Echo Coating (PECT)

Temp Comp: Pulse-Echo Temperature Compensation (PETP)

Thru-Paint: Echo-Echo (E-E)

Thru-Paint Verify: Echo-Echo Verify (E-EV)
Coating Only: Coating (CT)

Pulser:

Dual square wave pulsers.

Receiver:

Dual receivers - manual or AGC gain control with 110dB range (limited).

Timing:

Precision 25 MHz TCXO with single shot 100 MHz 8 bit ultra low power digitizer.



Power Source

Three 1.5V alkaline or 1.2V NiCad AA cells.

Typically operates for 150 hours on alkaline and 100 hours on NiCad (charger not included.)

Auto power off if idle 5 min.

Battery status icon.

Measuring

Range:

Pulse-Echo Mode (P-E) - (Pit & Flaw Detection) measures from 0.025 to 19.999 inches (0.63 to 508 millimeters).

Pulse-Echo Coating Mode (PECT) - (Material, Coating, Pit & Flaw Detection): Material: 0.025 to 19.999 inches (0.63 to 508 millimeters). Coating: 0.001 to 0.100 inches (0.01 to 2.54 millimeters).

Pulse-Echo Temp Comp Mode (PETP) - (Pit & Flaw Detection) Auto temperature compensation - measures from 0.025 to 19.999 inches (0.63 to 508 millimeters).

Echo-Echo Mode (E-E) - (Thru Paint & Coatings) measures from 0.100 to 4.0 inches (2.54 to 102 millimeters). Range will vary +/- depending on the coating.

Coating Only Mode (CT) - (Coating Thickness) Measures from 0.0005 to 0.100 inches (0.0127 to 2.54 millimeters). Range will vary +/- depending on the coating.

Resolution:

+/- 0.001 inches (0.01 mm)

Velocity Range:

0.0492 to 0.5510 in/ms
1250 to 13995 meters/sec

Single and Two point calibration option for material & coating, or selection of basic material types.

Units:

English & Metric

Display:

Large Digits - Standard thickness view. Digit Height: 0.700 inches (17.78 millimeters).

B-Scan - Time based cross section view. Display speed of 15 secs per screen.

Scan Bar Thickness - 6 readings per second. Viewable in B-Scan and Large Digit views.

Repeatability Bar Graph - Bar graph indicates stability of reading.

Feature Status Bar - Indicates features currently active.

Data Logger (CMX DL)

Log Formats:

Grid (alpha numeric)
Sequential (auto identifier)

Cell contents:

Graphics On: 16,000 readings ,B-Scan image, & gauge settings for every reading.

Graphics Off: 210,000 readings (coating, material, min & max)

OBSTRUCT to indicate inaccessible locations.

Memory:

32 megabit non-volatile ram.

Transducer

Transducer Types:

Dual Element (1 to 10 MHz).

Locking quick disconnect "00" LEMO connectors.

Standard 4 foot cable.

Custom transducers and cable lengths available for special applications.

Certification

Factory calibration traceable to national standards.

Warranty

2 year limited

Vibration Pens : PVM 100 and PVM 200



Extremely reliable and portable, these are low cost instruments specifically designed for on-site maintenance in the plant or workshop.

PVM 100 measures vibration level by Velocity RMS.

PVM 200 measures vibration level by Velocity RMS, Displacement Peak-Peak & Acceleration Peak.

PVM 100 and **PVM 200** feature one-button operation, holding function and automatic power-off.

Both **PVM 100** and **PVM 200** units have a remote switch and a magnetic base to avoid the handheld problem and thereby provide reliable and consistent data.

Technical specs:

Model	PVM 100	PVM 200
Parameter	Velocity RMS (mm/s) 0.2 to 199.9 mm/s	Acceleration, Velocity, Displacement
Testing range	Velocity: 0.1mm/s ~ 199.9mm/s	Acceleration: 0.2 to 199.9m/s ² (peak) Velocity: 0.1mm/s to 199.9 mm/s(RMS) Displacement: 0.001mm to 1.999 mm (peak-peak)
Frequency range	Velocity: 10Hz to 1kHz	Acceleration: 10Hz to kHz Velocity: 10Hz to 1kHz Displacement: 10Hz to 1000Hz
Accuracy	±5% ±2	±5% ±2
Display	4 digit LCD; refresh interval about 0.5 second	4 digit LCD
Power supply	½ AA, 3.6V	½ AA, 3.6V
Battery capacity	>100 hours working continuously	>100 hours working continuously
Operating Temperature	0°C to 50°C	0°C to 50°C
Environment humidity	<85%	<85%
Dimension	160mm×25mm × 17mm	160mm × 25mm × 17mm
Dimension	Aluminum case	Aluminum case
Weight	120g (with battery)	120g (with battery)

PVM 100/200

Standard Delivery

- Main unit with pouch 1
- Extra-long needle probe 1
- Remote control 1
- Magnetic base 1
- Battery 1
- Instruction manual 1

UT-310 Thru-Paint Ultrasonic Thickness Gauge



Features:

- Pocket-size, easy to operate.
- Three measurement modes: pulse-echo (P-E), echo-echo (E-E) and scan
- Through-coating thickness measurement using (E-E)
- Measuring Range: E-E: 0.12 to 1 inch (3 to 25mm)
P-E: 0.025 to 15.75 inches (0.65 to 400 mm) Range depends on probe/material combination.
- Automatic probe zero
- Automatic probe identification or recognition
- Memory: 5,000 readings with location number
- Data output: USB to PC
- Up to nine material velocities may be stored for selection, or a new velocity manual inputted

Specifications:

Measurement mode	P-E	<ul style="list-style-type: none"> -Standard measurement: for normal thickness measurement. -Minimum measurement: for curved surface -Differential measurement: displays the difference from the actual thickness -Measurement or from a user entered reference value -Average measurement : 2-9 point selectable -Limit measurement: Min. Max setting and alarm
	E-E	The metal wall thickness is accurately and quickly measured through surface coating
	Scan	Thickness value at 10 measurements per second while also display actual thickness (Ideal for high temp. thickness readings)
Probe identify	Automatic	
Probe zero	Automatic at power up and continuously during the measurement	
Gain adjust	Automatic gain adjustment Manual gain adjustment: low, standard and high	
Memory	5,000 groups (reading plus location number)	
Output	USB to PC	
Measuring Range	E-E : 3 to 25mm P-E: 0.65 to 400mm (range depends on probe/material combination)	
Resolution	0.01mm (0.001 in) for thickness up to 99.99mm (3.93 in) 0.1mm (0.01 in) for thickness above 99.99mm (3.93 in)	

Information Display	Measurement reading, Probe type, Velocity, Measurement mode, Measurement symbol, Battery-life indication
Velocity range	Nine material velocities are stored for selection; alternatively, manually enter the new velocity (1000m/s to 9999m/s)
Vel. measurement	Simply calibrate when a material's velocity is unknown
Display	128 x 64 graphics LCD monochrome
Battery Type	2 AAA Alkaline
Battery life	Up to 50 hours (without using backlight)
Shut off	Selectable: auto, 2 min., 5 min. or never
Work. Temperature	-20°C to +50°C
Unit	mm or inch
Dimensions	115mm x 64mm x 27mm
Weight	220g

Standard Delivery:

<ul style="list-style-type: none"> - Main unit - Standard 5-MHz transducer (D5301) - Built-in calibration block (4mm thick) - Couplant (4 oz) - Two AAA batteries - Calibration certificate - Operation manual - Carrying case 	
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Optional transducers:



D7004	10.0MHz	0.65 to 20mm range (P-E mode)	<60° C
D7006	7.5MHz	0.65 to 50mm range (P-E mode)	<60° C
D2012	2.0 MHz	2.0 to 400mm range (P-E mode)	<60° C
D5113	5.0MHz	2.0 to 200mm range (P-E mode)	<350° C
D5008	5.0MHz	0.8 to 400mm range (P-E mode)	<60° C Standard

UT-210 DIGITAL ULTRASONIC THICKNESS GAUGE



Brief

This state of the art, digital Ultrasonic Thickness Tester UT-210 is a menu-driven, fully functional unit offering everything from the basic measurement to extended memory (5000 readings storage) and USB output capabilities. This dynamic gauge is designed to measure the thickness of metallic and non-metallic materials such as steel, aluminum, titanium, plastics, ceramics, glass and any other good ultrasonic wave conductor as long as it has parallel top and bottom surfaces. The UT-210 is a quite versatile model which can be easily equipped with any of the low & high frequency probes as well as a high temperature probe.

Technical Data:

- Display type: 4-digit LCD
- Display resolution: 0.001 inches or 0.01mm
- Measurement range: 0.040-15.75 inches (1 to 400mm) in steel w/standard probe
- Memory capacity: 5000 readings
- Automatic recognition of probes with different frequencies
- Automatic zeroing of the unit
- Ten measurements per second in the scan mode
- Enlarged LCD (128 x 64 mm) with back light
- Sound velocity range: 3280-32805 ft/s (1000-9999 m/s)
- Operating temperature: 32°F-122°F (0°C-50°C)
- Output: USB communication cable with software
- Power supply: two AAA alkaline batteries
- Battery life: Approx. 250 hours
- Dimensions: 4-5/8 x 2-3/8 x 1-1/8 inch

- Weight: 7.7 ounces with batteries

Standard package: UT-210 unit, standard 5MHz probe D5008, built-in calibration block, coupling agent, two AAA batteries, operation manual, software, cable and carrying case.

Optional accessories: Small diameter probe D7006 (7.5MHz), High frequency probe D7004 (10MHz), Low frequency probe D2012 (2.0MHz), High temperature probe D5113 (5MHz)

UT-110 Digital Ultrasonic Thickness Gauge



The UT-110 Ultrasonic Thickness Gauge is our new and improved basic readout unit with automatic probe recognition, automatic zeroing and a larger, more easily read LCD. This instrument can measure with very high resolution (0.01 mm or 0.001 inches) the thickness of metallic and non-metallic materials such as steel, aluminum, titanium, plastics, ceramics, glass and any other good ultrasonic wave conductor. The UT-110 accurately displays readings in either inches or millimeters.

Features:

- Accurately displays readings in either inches or millimeters
- Simple calibration to either a known thickness or a sound velocity

Technical Specifications:

- Display type: 4-digit LCD
- Display resolution: 0.001 inches or 0.01mm
- Measuring range: 0.04 to 15.75 inches (1 to 400mm) in steel
- Automatic recognition of probes with different frequencies
- Automatic zeroing of the unit
- Enlarged LCD (128 x 64 mm) with back light
- Sound velocity range: 3280-32800 ft/s (1000-9999 m/s)
- Operating temperature: 14°F to 122°F (-10°C to 50°C)
- Power supply: two AAA batteries
- Battery life: approx. 250 hours with one battery set
- Dimensions: 4-5/8 x 2-3/8 x 1-1/8 inches
- Weight: 7.7 ounces with batteries

Standard Package:

- UT-110 processor,
- Standard 5MHz probe D5008
- Built-in calibration block
- Two AAA batteries
- Coupling agent
- Operation manual and calibration certificate
- Carrying case

Standard & Optional Probes:

Probe Part #	Frequency (MHz)	Measuring Range	Application
D5008 Standard	5 MHz	1.0 to 400 mm	Standard
D7006 Optional	7.5 MHz	0.65 to 50 mm	Thin materials
D2012 Optional	2 MHz	2.0 to 400 mm	Coarse-grained materials and rough surfaces
D5113 Optional	5 MHz	2.0 to 200 mm	High temperature environment up to 350° C

TR200 Surface Roughness Tester

Features

- Measures metal and non-metal parts
- Menu operation, digital display, multi-parameters
- Graphical display on large LCD
- Stylus position indicator
- Automatic cut-off
- RS 232 interface to PC or printer



Technical Specifications

Roughness parameters	Ra, Rz, Ry, Rq (RMS), Rt, Rp, Rmax, Rm, R3z, S, Sm, Sk, tp
Assessed profiles	Primary profile (P), Roughness profile (R), tp curve (material ratio Mr)
Profile recording magnification	Vv: 200x to 20000x Vh: 20x, 50 x, 200 x
Standards	Conforms to ISO / DIN /JIS / ANSI
Measuring mode	Metric (μm) and English (μ inch)
Display resolution	0.001 μm or 0.04 μ inch
Accuracy	Error less than 10% of reading
Display	LCD 128 x 64 dot-matrix with backlight
Dimensions of LCD	50 x 30mm screen
Display features	Stylus position indicator
	Battery level indicator
	Direct display of parameters and profiles
	Direct printing
	LCD brightness adjustment
	Auto-off after 5 minutes with auto-store
	Calibration through internal software for each cut-off setting
Display languages	English, German, French, Italian, Spanish, Dutch
Data output	RS232; direct to printer TA220 or PC (requires optional software)

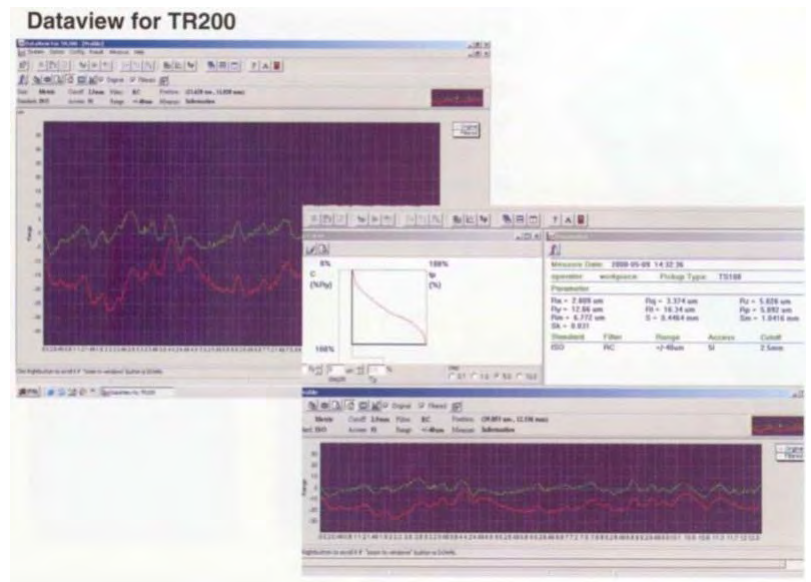
Range	Ra, Rq: 0.01 to 40 μm
	Rz, Ry, Rp, Rt, R3z: 0.02 to 160 μm
	Sm, S: 2 to 4000 μm
	tp: 1 to 100% (%Ry)
Cut-off lengths	0.25mm / 0.8mm / 2.5mm / auto
Evaluation length Ln	1 to 5 cut-off lengths (selectable)
Tracing length Lt	(1 to 5 cut-off lengths) + (2 cut-off lengths)
Digital filter	RC, PC-RC GAUSSIAN, D-P
Stylus	Standard model TS100, inductive; diamond tip with a 5 μm radius
Measurement of a bore	Minimum diam. of 6.0mm, measure to depth of 15mm (TS100)
Power	Li-Ion battery, rechargeable
Battery capacity	1000mAh (>3000measurements)
Charger	220V, 50Hz and 120V, 60Hz
Working temperature	5 $^{\circ}$ to 40 $^{\circ}$ C
Dimensions	141mm x 56mm x 48mm
Weight	440g

Standard Package

- Main processing unit
- TS100 stylus
- Adjustable leveler and protection nose
- Charger: 220V, 50Hz or 120V, 60Hz
- RS232 connection cable
- Screwdriver
- Ra roughness standard
- Dataview software
- Operating manual
- Calibration certificate
- Carrying case

Optional Accessories

- Special styluses (see following table)
- Operating stand TA610
- Connection board for attachment to platform
- Extending rod for stylus
- Dataview software
- TA220 mini-printer
- Precision Reference Standard Certified (NIST traceable)



Optional Styluses for TR200

Stylus	Characteristic
TS100 Standard	For flat surfaces
TS110 Optional	For curved surfaces such as convex and concave
TS120 Optional	For roughness measurement in bores
TS130 Optional	For roughness measurement in grooves





- Handheld, Electronic, Digital
- Ra and Rz parameters standard available at the push of a button
- Adjustable cut-off lengths according to DIN / ISO standard
- Measurements in both English and Metric unit mode
- Calibration fully adjustable at the key-board
- "Beep" sound after each measurement to inform the user that the measuring procedure is complete

Technical Specification

- Measures flat, outer-cylinder and sloping surfaces
- Measures metal and non-metal processed parts
- Roughness parameters: Ra, Rz
- Measuring accuracy: < 10% of reading
- Measuring range: Ra: 0.05um to 10.0um; Rz: 0.1um- 50um
- Cut-off length: 0.009 in, 0.03 in, 0.09 in (0.25mm, 0.8 mm, 2.5mm)
- Tracing length: 0.23 in (6mm)
- Measuring length: 0.06 in, 0.16 in, 0.2 in (1.25mm, 4.0mm, 5.0mm)
- Dimensions: 4.9 x 2.8 x 1.0 in (125 x 73 x 26mm)
- Power supply: 3.6V (Two NiMH batteries)
- Working temperature: 32°F to 104°F (0° to 40°C)
- Weight: 0.4lb (200g)

Standard Package

- Processor with integrated pick-up
- Roughness standard
- Battery charger
- Carrying case

The PX Series

THE PX SERIES of Precision Thickness Gauges utilize state-of-the-art digital technology to produce fast and accurate readings. The gauges are designed with the user in mind. They are **PACKAGED** in an all aluminum sealed case making it resistant to the working environment. The gauges are simple to operate and are loaded with the **FEATURES** you have requested: Alarm Mode, Differential Mode, Internal Data-Logging and RS-232 data output port to interface with a computer or other data acquisition system.

The gauges have a **MEASURING RANGE** from 0.0060 to 1.0000 inch, (0.15 to 25.40 mm). Using a single element delay tip transducer, the gauges will measure thin materials in **ECHO-TO-ECHO MODE** and automatically switch to **INTERFACE - ECHO MODE** when measuring thicker materials and plastics.

THE PX-7'S echo-to-echo mode offers the user the ability to measure the thickness of materials without removing the paint or the coating.

Physical

Weight:

10 ounces (with batteries).

Size:

2.5 W x 4.5 H x 1.24 D inches
(63.5 W x 114.3 H x 31.5 D mm).

Operating Temperature:

-20 to 120 F (-30 to 50 C).

Case:

Extruded aluminum body with
nickel-plated aluminum end caps.
Sealed connectors and end caps.

Keypad

Sealed membrane that is
resistant to both water and
petroleum products.

9 tactile-feedback keys.

Transducer

Single element with delay tip.

10 to 22 MHz frequency range.

Locking quick disconnect
LEMO connector.

4 foot cable.

Custom transducers available
for special applications.

Warranty

5 year limited.



Power Source

Two 1.5V alkaline or
1.2V NiCad AA cells.

Typically operates for
150 hours with alkaline and
100 hours with NiCad.

Display flashes when battery is
low. Unit turns off automatically
when battery is too low to
operate reliably.

Display

Multi-function 4.5 digit liquid
crystal display with 0.500 inch
numerals, backlit for use in
poor light conditions.

Backlight is selectable
on / off / auto (illuminates only
when taking a measurement).

Measurements displayed in
inches, inches/microsecond,
millimeters, and meters/second.

Bar graph indicates stability
of reading.

Certification

Factory calibration traceable to
national standards.

Internal Data Logger (PX-7DL only)

Automatic Data Logging System
1000 reading capacity, (10 files
of 100 readings each).

OBST indicates no reading.

Complete with data acquisition
software and cable.

Measuring

Range:

Measures from 0.0060 to 1.0000
inch (0.15 to 25.40 millimeters).
Switch to select English or
Metric units.

Resolution:

0.0001 inch (0.001 millimeter)

Velocity Range:

0.0492 to .3937 in./μs.
(1250 to 10,000 meters/second).

Measuring Modes

Interface to Echo, Echo-to-Echo,
(through paint), **Plastics**, and
Auto-Switchable.

Four readings per second for
single point measurements or
8 per second in **Scan Mode**—
captures the minimum thickness.

Single point calibration.

Features

Differential Mode:

Enter acceptable thickness value,
unit will display +/- the difference
from the value entered.

Alarm Mode:

Enter a minimum acceptable
thickness value. If measurement
falls outside Hi/Lo limits, red LED
will illuminate and sounds beep-
er. If measurement is between
Hi/Lo limits, green
LED will illuminate.

Data Output::

RS-232 output sends data to
a serial printer, a computer or
other external storage device.

PosiTector® 6000 Series

Coating Thickness Gages for
ALL Metal Substrates



Available on the
App Store



DeFelsko®

The Measure of Quality

PosiTector® 6000 Series

All Gages Feature...

Simple

- Ready to measure—no adjustment required for most applications
- Enhanced one-handed menu navigation
- Flashing display—ideal in a noisy environment
- RESET feature instantly restores factory settings

Durable

- Solvent, acid, oil, water and dust resistant—weatherproof
- Wear-resistant probe tip
- Shock-absorbing, protective rubber holster with belt clip
- Two year warranty on gage body AND probe

Accurate

- Certificate of Calibration showing traceability to NIST included
- Built-in temperature compensation ensures measurement accuracy
- Hi-RES mode increases displayed resolution for use on applications that require greater precision
- Conforms to national and international standards including ISO and ASTM

Versatile

- PosiTector body universally accepts all PosiTector 6000, 200, SPG, DPM and UTG probes easily converting from a coating thickness gage to a surface profile gage, dew point meter or ultrasonic wall thickness gage
- Multiple calibration adjustment options including 1 point, 2 point, known thickness, average zero
- Selectable display languages
- Hi Contrast backlit display for bright or dark environments
- Flip Display enables right-side-up viewing
- Extended cables available (up to 75 m/250 ft) for remote measuring
- Uses alkaline or rechargeable batteries (built-in charger)

Powerful

- Continually displays/updates average, standard deviation, min/max thickness and number of readings while measuring
- Screen Capture—save screen images for record keeping and review
- HiLo alarm audibly and visibly alerts when measurements exceed user-specified limits
- FAST mode—faster measurement speed for quick inspection
- USB port for fast, simple connection to a PC and to supply continuous power. USB cable included
- PosiSoft USB Drive—stored readings and graphs can be accessed using universal PC/Mac web browsers or file explorers. No software required
- Every stored measurement is date and time stamped
- Software updates via internet keep your gage current
- Connects to PosiSoft.net (see far right panel)

Probes available for a variety of applications



For measuring paint, powder, etc. on all metals...



...and for measuring galvanizing, plating, anodizing and more.

Gage Selection...

Select Substrate

- F** — for ferrous metals (steel and cast iron)
- N** — for non-ferrous metals (aluminum, copper, etc.)
- FN** — for all metal substrates—Gage automatically recognizes the substrate and takes a measurement

Select Standard or Advanced Features


Standard Models

Includes ALL features as shown on left plus...

- Monochrome display with transfective technology enhances sunlight readability
- Storage of 250 readings—stored readings can be viewed or downloaded

Advanced Models

Includes ALL features as shown on left plus...

- Hi Contrast reversible color LCD
- Storage of 100,000 readings in up to 1,000 batches and sub-batches
- Onscreen help, real time graphing, picture prompting and more
- Batch annotation—add notes and change batch names with onscreen QWERTY keyboard
- WiFi technology wirelessly synchronizes with PosiSoft.net, downloads software updates and connects with mobile devices for expanded functionality
- Data transfer via USB to a PC or via  Bluetooth® Wireless Technology to a PC or printer
- Scan mode—take continuous readings without lifting the probe
- Multiple stored calibration adjustments for measuring on a variety of substrate conditions
- SSPC-PA2 feature determines if film thickness over a large area conforms to user-specified min/max levels
- PSPC 90/10 feature determines if a coating system complies with an IMO performance standard for protective coatings

Select from a variety of measurement ranges and probe styles

(see back page ordering guide)

Heavy-duty, gold-plated locking connector for industrial environments



Separate Probe Style

Removable Probes can be detached and replaced with any one of our wide variety of probes including separate probes and microprobes



Built-in Probe Style



FKS

90°

0°

45°

Regular

Rugged Features...

Sealed USB Port
for communicating
with a PC or Mac

Water and dust
resistant

WEATHERPROOF

Hi resolution color LCD

Scratch/solvent/impact
resistant lens

Multi-function
navigation button

Solvent, acid, oil
resistant, high grade,
industrial strength
housing

**Advanced
Model shown
in Memory Mode**

Quality high-flex
cable and strain relief

Stainless steel probe
with knurled finger grip

Strong wear-resistant
ruby-tipped probe

*All Regular Separate Probes
are suitable for underwater use*



Standard model shown in Statistics Mode with shock-absorbing, protective rubber holster



FHXS Probe with Alumina wear face and braided cable for hot or rough surfaces



Flip Display enables right-side-up viewing



Microprobe series for small parts and hard-to-reach areas

PosiSoft®... **FREE SOLUTIONS** for viewing, analyzing and reporting data:

PosiSoft USB Drive Connect to a PC/Mac using the supplied USB cable to access and print stored readings, graphs, photos, notes and screen captures. No software or internet connection required.



PosiSoft.net A web-based application offering secure centralized management of PosiTector readings. Access your data from any web-connected device.














PosiSoft Software
Newly updated version 3.0 desktop software for PC or Mac. Available as a free download.

PosiSoft Mobile Access readings, graphs, capture photos and update annotations using WiFi enabled devices such as tablets, smart phones and computers. (Advanced models only)



**PosiTector
bodies accept
all 6000, 200,
SPG, DPM and
UTG probes**

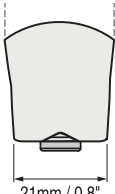
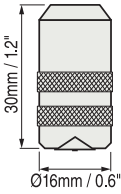
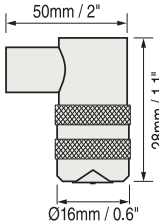
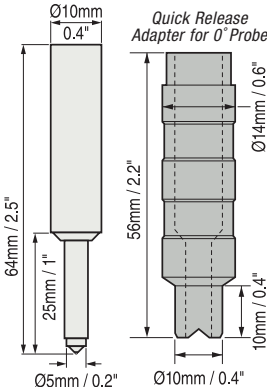
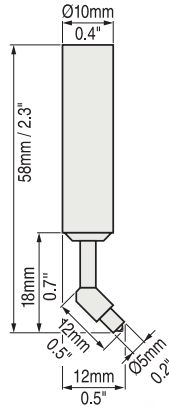
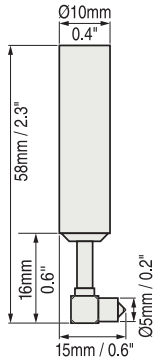


PosiTector® <i>6000 Series</i>		ORDERING GUIDE		Our most popular Removable Built-in and Regular Separate probe models		90° Regular probe for tight spots	Ideal for anodized aluminum	Microprobes – Our smallest probes for small parts or hard-to-reach areas		Removable Built-in and Separate probes for thick protective coatings; epoxy, rubber, intumescent fireproofing and more				
														
FERROUS PROBES	Standard	F1	FS1	FRS1		F0S1	F4S1	F9S1	FT1	FTS1	FHXS1*	FKS1	FLS1	
	Advanced	F3	FS3	FRS3		F0S3	F4S3	F9S3	FT3	FTS3	FHXS3*	FKS3	FLS3	
NON-FERROUS PROBES	Standard	N1	NS1	NRS1	NAS1	N0S1	N4S1	N9S1				NKS1		
	Advanced	N3	NS3	NRS3	NAS3	N0S3	N4S3	N9S3				NKS3		
COMBINATION PROBES	Standard	FN1	FNS1	FNRS1						FNTS1				FNGS1**
	Advanced	FN3	FNS3	FNRS3						FNTS3				FNGS3**
Range		0–60 mils 0–1500 µm			Ferrous: 0–45 mils and 0–1150 µm Non-Ferrous: 0–25 mils and 0–625 µm			0–250 mils 0–6 mm		0–400 mils 0–10,000 µm	0–500 mils 0–13 mm	0–1.5 inches 0–38 mm	0–2.5 inches 0–63.5 mm	
Accuracy†		±(0.05 mil + 1%) 0–2 mils ±(0.1 mil + 1%) >2 mils ±(1 µm + 1%) 0–50 µm ±(2 µm + 1%) >50 µm			±(0.02 mil + 1%) 0–4 mils ±(0.1 mil + 3%) >4 mils ±(0.5 µm + 1%) 0–100 µm ±(2 µm + 3%) >100 µm			±(0.5 mil + 1%) 0–100 mils ±(0.5 mil + 3%) >100 mils ±(0.01 mm + 1%) 0–2.5 mm ±(0.01 mm + 3%) >2.5 mm		±(0.1 mil + 3%) ±(2 µm + 3%)	±(1 mil + 3%) ±(0.02 mm + 3%)	±(0.01 in. + 3%) ±(0.2 mm + 3%)		
Matching DeFelsko Calibration Standards		STDS1 STDA1			STDS2 STDA2			STDP1		STDP7	STDP5	STDP8	STDP8 (included)	

Ferrous probes measure non-magnetic coatings on ferrous metals. **Non-Ferrous probes** measure non-conductive coatings on non-ferrous metals. ***FHXS Xtreme probe** with Alumina wear face and braided cable measures non-conductive coatings on steel. Ideal for rough or hot surfaces up to 250° C (500° F). ****FNGS probe** measures non-conductive coatings on all metals.

†Accuracies are stated as a fixed value plus a percentage of the gage's actual reading.

Probe Details (All probe details can be found online at www.defelsko.com/p6000/probes)

REMOVABLE BUILT-IN	REGULAR & FTS	90° REGULAR	F0S & N0S WITH ADAPTER	F4S & N4S	F9S & N9S
 Side View 21mm / 0.8"	 30mm / 1.2" Ø16mm / 0.6"	 50mm / 2" 28mm / 1.1" Ø16mm / 0.6"	 Quick Release Adapter for 0° Probe Ø10mm / 0.4" 64mm / 2.5" 25mm / 1" Ø5mm / 0.2" 56mm / 2.2" Ø14mm / 0.6" 10mm / 0.4"	 Ø10mm / 0.4" 56mm / 2.3" 18mm / 0.7" 12mm / 0.5" 12mm / 0.5" Ø5mm / 0.2"	 Ø10mm / 0.4" 58mm / 2.3" 16mm / 0.6" 15mm / 0.6" Ø5mm / 0.2"

ALL GAGES COME COMPLETE with precision plastic shim(s), protective rubber holster with belt clip, wrist strap, 3 AAA alkaline batteries, instructions, protective lens shield, convenient carrying case, Long Form Certificate of Calibration traceable to NIST, USB cable, PosiSoft.net account, two (2) year warranty.

SIZE: 137 x 61 x 28 mm
(5.4" x 2.4" x 1.1")

WEIGHT: 140 g (4.9 oz.)
without batteries

Conforms to ISO 2178/2360/2808,
ISO 19840, ASTM B499/D1186/
D1400/D7091/E376/G12, BS3900-C5,
SSPC-PA2 and others

Options

Bluetooth Printer receives data from Advanced models

AC Power Kit for continuous operation or battery charging—works in any country

Coating Thickness Standards to fulfill both ISO and in-house quality control requirements

Rechargeable Batteries—a set of eneloop NiMH AAA batteries

Extended Cables for under-water or remote measuring. Specify length when ordering.



PosiSoft® Solutions

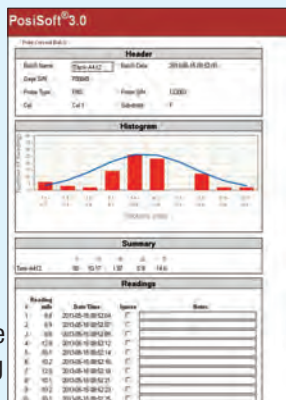
Suite of Software

The PosiSoft suite of software solutions offers 4 FREE ways to view and report your data, ranging from dedicated desktop software for PC and Mac computers to cloud-based PosiSoft.net.

PosiSoft® 3.0 Desktop Software

Newly updated version 3.0 desktop software for PC or Mac computers

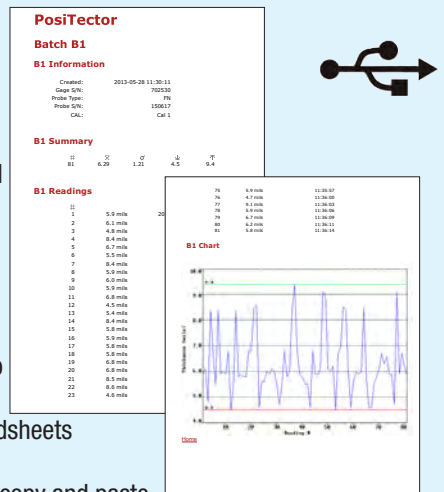
- Import (download) measurement data via USB (all gages) or WiFi (PosiTector Advanced models only)
- Customize reports by adding pictures, logos, screen captures, notes and more
- Measurement data is copied (imported) from the instrument to a user selectable location — ideal for storing and sharing data on a network or cloud-drive
- Create custom layouts using a simple drag and drop Template Design toolbox; save layouts for future use
- Downloaded data is stored in comma-separated text files which can easily be imported into supporting applications such as documents, spreadsheets and databases



PosiSoft® USB Drive

Access your PosiTector as a flash drive

- View and print readings and graphs using universal PC/Mac web browsers or file explorers
- Measurement data is stored in comma-separated text files which can easily be imported into supporting applications such as documents, spreadsheets and databases
- Simple file management - copy and paste data from the PosiTector to a local folder on your computer, network or cloud-drive



Preformatted HTML reports are stored in the gage.

PosiSoft®.net (formerly PosiTector.net)

A cloud-based application offering secure centralized management of PosiTector readings. Access your data from any web-connected device anywhere in the world.

- Synchronize measurement data when connected via USB, Bluetooth or WiFi wireless technology
- Generate reports with graphs, annotations and images
- Share measurement data with authorized users via a secure login from any computer or web-enabled device
- Export data to popular formats such as XML, .CSV (comma-separated values), and CQATK for further analysis
- Securely stores data in the cloud
- Synchronize images and batch notes to your PosiTector
- Compatible with PosiTector SPG/DPM/6000/200/UTG Standard & Advanced instruments
- Internet connection required



PosiSoft® Mobile

Gage-based software application featured in all PosiTector Advanced instruments. Access readings, graphs, capture photos and update notations using WiFi enabled devices such as tablets, smart phones and computers



- Browse stored measurement data including notes, images, statistics and charts
- Update batch names/notes using your mobile device's keyboard
- Insert images directly into gage batches using your mobile device's camera or image library
- Remotely view the live display of a working PosiTector
- Email data as PDF reports or .CSV comma-separated text files
- Accessible from any WiFi enabled computer or smart device using a standard web browser including PC/Mac, Windows Phone/Mobile, Blackberry, Android, Apple iOS and more

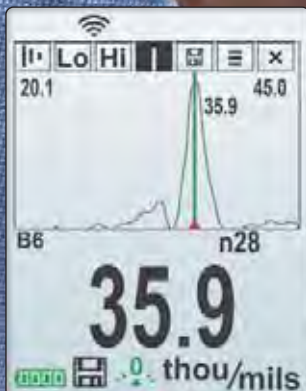
PosiSoft Mobile Manager is a discovery tool that searches your local area WiFi network for WiFi enabled PosiTector Advanced instruments.

- Available for Apple iOS and Android users



PosiTector® *200 Series*

**Coating Thickness
Gages for measuring
on Concrete, Wood,
Plastic and more...**



**Advanced models
measure up to 3
layers with graphics**

DeFelsko®

The Measure of Quality

PosiTector® 200 Series

All Gages Feature...

Simple

- Ready to measure—no adjustment required to measure most coatings
- Enhanced one-handed menu navigation
- Flashing display—ideal in a noisy environment
- RESET feature instantly restores factory settings

Durable

- Solvent, acid, oil, water and dust resistant—weatherproof
- Shock-absorbing, protective rubber holster with belt clip
- Two year warranty on gage body AND probe

Accurate

- Certificate of Calibration showing traceability to NIST included
- Responsive transducers provide fast, accurate readings
- Proven non-destructive ultrasonic technique conforms to ASTM D6132 and ISO 2808

Versatile

- PosiTector body universally accepts all PosiTector 200, 6000, SPG, DPM and UTG probes easily converting from a coating thickness gage to a surface profile gage, dew point meter or ultrasonic wall thickness gage
- Mils/Microns switchable
- Selectable display languages
- Hi Contrast backlit display for bright or dark environments
- Flip display enables right-side-up viewing
- Uses alkaline or rechargeable batteries (built-in charger)

Powerful

- Continually displays/updates average, standard deviation, min/max thickness and number of readings while measuring
- Screen Capture—record and save screen images into memory for record keeping and review.
- USB port for fast, simple connection to a PC and to supply continuous power. USB cable included.
- PosiSoft USB Drive—stored readings and graphs can be accessed using universal PC/Mac web browsers or file explorers. No software required.
- Every stored measurement is date and time stamped
- Software updates via the internet keep your gage current
- Connects to PosiSoft.net (see far right panel)

Select from a variety of measurement ranges

(see back page ordering guide)



Standard model

B Probe for measuring polymer coatings on wood, plastic, etc.



Advanced model

C Probe for measuring coatings on concrete, fiberglass, etc.

Gage Selection...

Select Standard or Advanced Features

Standard Models

Includes ALL features as shown on left plus...

- Measure the total thickness of a coating system
- Monochrome display with transfective technology enhances sunlight readability
- Storage of 250 readings—stored readings can be viewed or downloaded

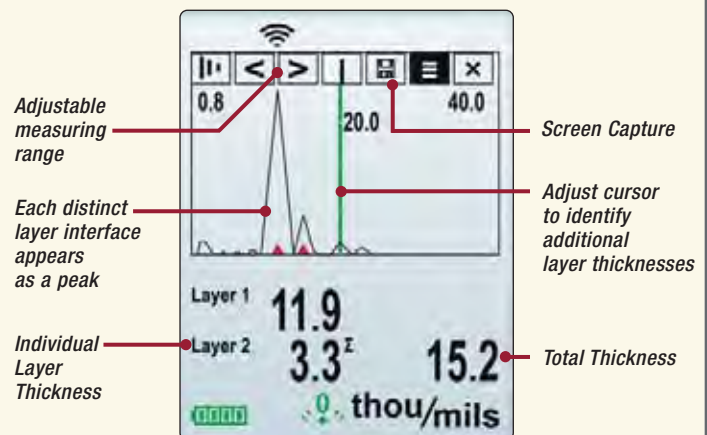


Advanced Models

Includes ALL features as shown on left plus...

- Measure the total thickness of a coating system or up to 3 individual layer thicknesses in a multi-layer system. Also features graphic display for detailed analysis of the coating system
- Hi Contrast reversible color LCD
- Storage of 100,000 readings in up to 1,000 batches
- Onscreen help, real time graphing, picture prompting and more
- Batch annotation—add notes and change batch names with onscreen QWERTY keyboard
- WiFi technology wirelessly synchronizes with PosiSoft.net, downloads software updates and connects with mobile devices for expanded functionality
- Data transfer via USB to a PC or via Bluetooth® Wireless Technology to a PC or printer
- Graphics mode with Screen Capture

Easy-to-read graphic display provides clear, detailed analysis of coatings.



Advanced model shown in Graphics mode

Rugged Features...

Sealed USB Port
for communicating
with a PC or Mac

Water and dust resistant—
weatherproof

Hi resolution color LCD

Chart multiple layers

Scratch/solvent/impact
resistant lens

Advanced model shown
in Memory mode

Multi-function
navigation button

Solvent, acid, oil
resistant, hi-grade,
industrial strength housing

Shock-absorbing, protective
rubber holster with belt clip
and wrist strap

WEATHERPROOF

Quality high-flex cable and strain relief

Comfortable, ergonomic
finger grip

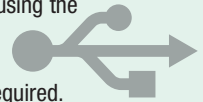
Plastic-tipped
probe will not
scratch surface



D Probe
ideal for measuring
polyurea.

PosiSoft® ... **FREE SOLUTIONS** for viewing, analyzing and reporting data:

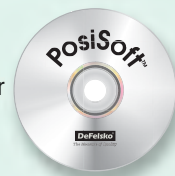
PosiSoft USB Drive Connect to a PC/Mac using the
supplied USB cable to access and print stored
readings, graphs, photos, notes and screen
captures. No software or internet connection required.



PosiSoft.net A web-based application offering secure
centralized management of PosiTector readings.
Access your data from any web-connected device.



PosiSoft Software Desktop Software
for downloading, viewing and printing your
measurement data.



PosiSoft Mobile Access readings, graphs, capture photos
and update annotations using WiFi enabled devices,
such as tablets, smart phones and computers.
(Advanced models only)



Ordering Guide

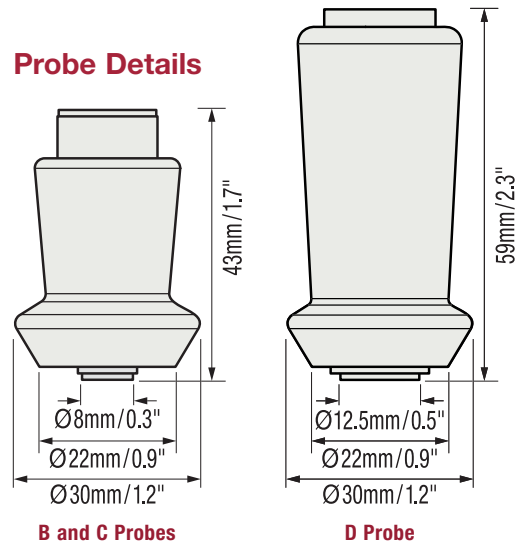
PosiTector 200 Model	B/Std	B/Adv	C/Std	C/Adv	D/Std	D/Adv
Measures Total Thickness	x	x	x	x	x	x
Measures Individual Layers		x		x		x
Graphic Display		x		x		x
Typical Applications	Polymer coatings on wood, plastic, etc.		Coatings on concrete, fiberglass, etc.		Thick, soft coatings such as polyurea, asphaltic neoprene, very thick polymers, etc.	
Range*	13 – 1000 microns 0.5 – 40 mils		50 – 3800 microns 2 – 150 mils		50 – 7600 microns 2 – 300 mils	
Accuracy	± (2 microns + 3% of reading) ± (0.1 mil + 3% of reading)				± (20 microns + 3% of reading) ± (1 mil + 3% of reading)	
Minimum Individual Layer Thickness**		13 microns 0.5 mil		50 microns 2 mils		500 microns 20 mils
Matching DeFelsko Thickness Standards	STDA3		STDP6		STDP1	

*Range limits apply to polymer coatings. D Probe polyurea range is 50–5000 microns (2–200 mils). **For multiple layer applications only. Dependent on material being measured.



Body accepts all PosiTector 6000, SPG, DPM, UTG and 200 Probes

Probe Details



ALL GAGES COME COMPLETE with body and probe, couplant (ultrasonic gel), precision plastic shims, protective rubber holster, belt clip, wrist strap, 3 AAA alkaline batteries, instructions, nylon carrying case with shoulder strap, protective lens shield, Long Form Certificate of Calibration traceable to NIST, USB cable, PosiSoft.net account, two (2) year warranty

SIZE: 135 x 61 x 28 mm (5.25" x 2.4" x 1.1")

WEIGHT: 140 g (4.9 oz.) without batteries

Conforms to ASTM D6132 and ISO 2808

Accessories

Bluetooth Printer receives data from Advanced models

Ultrasonic Gel— additional 4 oz. bottles available (case of 12)

Rechargeable Batteries—set of eneloop NiMH AAA batteries

Coating Thickness Standards to fulfill both ISO and in-house quality control requirements

AC Power Kit for continuous operation or battery charging—works in any country

Protective Lens Shields protect the display from overspray

PosiSoft for Windows Analysis Software—downloads stored readings to a PC (FREE)



MVX

A/B Scan Ultrasonic Thickness Gauge



- ▶ The physical size, weight, and display resolution are just a few of the benefits of the **MVX**.
- ▶ The adjustable square wave pulser provides the flexibility necessary for both high resolution and penetration requirements.
- ▶ The **MVX** is equipped with multiple viewing options to provide users with a complete set of inspection tools: (RF waveform, +/- Rectified waveform, Time based B-Scan, and Large Digits).
- ▶ The A-Scan rectified mode is commonly used for detecting flaws/pits in pulse-echo mode and measuring thru-paint and coatings in echo-echo mode.
- ▶ The time-based B-Scan feature of the **MVX** displays a cross section of the test material. It is commonly used to display the profile of the bottom surface of the test material.
- ▶ Built-in hardware AGC gain control for thru-paint measurements in multi-mode operation.
- ▶ The variety of calibration options is just one more example of **MVX's** overall versatility.
- ▶ The **MVX** has the ability to store 64 custom user-defined setups. All factory setups can be selected, edited and saved to any setup location.
- ▶ **MVX** is equipped with an alpha-numeric data logger to provide increased versatility for those custom reporting needs.
- ▶ The built-in transducer types offer increased linearity between transducers.
- ▶ The high speed scan feature speeds up the inspection process by making 32 measurements per second. Remove transducer from the test material and display the minimum measurement scanned.
- ▶ Visual alarm with Hi and Lo limit settings for specific application tolerances.
- ▶ Use the find feature to locate the detection point, while automatically adjusting the display to bring the signal into view.
- ▶ **MVX** also comes complete with our Windows® PC software for transferring data to and from a PC.
- ▶ A basic Flaw Prove-Up Mode for use with angle beam style transducers.
- ▶ Multiple language support
- ▶ 2 year limited warranty

MVX SPECIFICATIONS

Physical

Weight:

13.5 ounces (with batteries)

Size:

2.5 W x 6.5 H x 1.24 D inches
(63.5 W x 165 H x 31.5 D mm)

Operating Temperature:

-14° to 140°F (-10° to 60°C).

Keyboard:

Membrane switch with
twelve tactile keys.

Case:

Extruded aluminum body
with nickel-plated aluminum
end caps (gasket sealed).

Data Output:

Bi-directional RS232 serial port;
Windows® PC interface software.

Display:

1/8in VGA grayscale display
(240 x 160 pixels); viewable area
2.4 x 1.8in (62 x 45.7mm);
EL backlit (on/off/auto invert).

Ultrasonic Specifications

Measurement Modes:

Pulse-Echo (flaws, pits)
Echo-Echo (thru-paint)

Pulser:

Square wave pulser with adjustable
pulse width (spike, thin, wide).

Receiver:

Manual or AGC gain control with
40dB range, depending on mode
selected.

Timing:

20 MHz with ultra low power
8 bit digitizer.

Certification

Factory calibration traceable to
national standards.

Warranty

2 year limited

Power Source

Three 1.5V alkaline or
1.2V NiCad AA cells.

Typically operates for 150 hours on
alkaline and 100 hours on NiCad
(charger not included).

Auto power off if idle 5 minutes.

Battery status icon.

Measuring

Range:

Pulse-Echo Mode: (Pit & Flaw
Detection) measures from
0.025 9.999 inches (0.63 to 254
millimeters).

Echo-Echo Mode: (Thru Paint &
Coatings) measures from 0.050 to
4.0 inches (1.27 to 102 millimeters).
Range will vary +/- depending on the
thickness of coating.

Resolution: +/- .001 inches (0.01
mm)

Velocity Range:

.0492 to .3936 inches/ms
1250 to 9999 meters/sec

Single and Two point calibration
option, or selection of basic material
types

Units: English & Metric

Display

Display Views:

A-Scan Rectified +/- (flaw view)
RF (full waveform view) .

B-Scan Cross section view; display
speed of 15 secs per screen.

Large Digits Standard thickness
view; Digit Height: 0.400 in (10mm).

Scan Bar Thickness 6 readings per
second; Viewable in B-Scan and
Large Digit views.

Repeatability Bar Graph Bar graph
indicates stability of reading.

Data Logger (Internal)

12,000 readings and waveforms
(alpha numeric storage).

OBSTRUCT to indicate
inaccessible locations.

Memory:

16 megabit non-volatile ram

Transducer

Transducer Types:

Dual Element (1 to 10 MHz).

Locking quick disconnect
“00” LEMO connectors.

Standard 4 foot cable.

Custom transducers and cable
lengths are available for special
applications.

Features:

Setups:

64 custom user-definable setups;
Factory setups can also be edited
by the user.

Gates:

Single gate in pulse-echo mode, or
single gate with holdoff in echo-echo
mode; Adjustable threshold.

Selectable Transducers:

Selectable transducer types with
built-in dual path error correction for
improved linearity.

Alarm Mode:

Set Hi and Lo tolerances with
audible beeper and visual LEDs.

Fast-Scan Mode:

Takes 32 readings per second and
displays the minimum reading found
when the transducer is removed.

MMX Multi-Mode Thickness Gauges

Two Words:

Versatility & Convenience

The MMX Series has arrived! These gauges are the answer to both versatility and convenience in every way! The MMX series defines versatility by combining features like: Fast Scan, Alarm (audible/visual), and data logging, along with multi-mode for reading through and eliminating the thickness of painted or coated materials. The MMX demonstrates convenience by making all these features available to the user with just the touch of a button.

Conveniently toggle between pulse-echo mode (detect flaws & pits), and echo-echo mode (eliminate paint & coating thickness), to cover all your inspection requirements. No need to remove or allow for errors due to paint and coatings. The MMX gauges use a highly damped dual element style transducer for both modes, eliminating the need to switch between transducer types.

The MMX gauges are packaged in an all aluminum sealed case, making them rugged and resistant to the working environment—Dakota's trademark.

5 Year Limited Warranty



THE MMX SERIES

DAKOTA ULTRASONICS' has succeeded in adding the final touches to the rugged MX line with the new multi-mode MMX series. The MMX-6 and MMX-6DL have not only been combined with all the durability and features of the MX series gauges, but have also been equipped with the ability to measure through painted or coated materials and eliminate the thickness of the paint or coating. Our 5 year limited warranty indicates how we feel about the reliability and durability of the new **MMX Series**.

APPLICATIONS: Corrosion & Pitting • Tube & Pipe • Tanks • Boilers • Glass • Variety of Applications

S P E C I F I C A T I O N S

Physical

Weight:

10 ounces (with batteries).

Size:

2.5 W x 4.5 H x 1.24 D inches
(63.5 W x 114.3 H x 31.5 D mm).

Operating Temperature:

-20°F to 120°F (-30°C to 50°C).

Case:

Extruded aluminum body
with nickel-plated aluminum
end caps (gasket sealed).

Keypad

Sealed membrane that is
resistant to both water and
petroleum products.

Nine tactile-feedback keys.

Transducer

Dual-element (transmit and
receive).

1 to 10 MHz frequency range.

Special high-damped transducers
available for Through Paint &
Coating measurements.

Locking quick disconnect LEMO con-
nectors.

4 foot cable.

Custom transducers available
for special applications.

Power Source

Two 1.5V alkaline or
1.2V NiCad AA cells.

Typically operates for 200 hours on
alkaline and 130 hours on NiCad.

Display flashes when battery is low.
Unit turns off automatically when bat-
tery is too low to operate reliably.

Display

Multi-function 4.5 digit liquid
crystal display with 0.500 inch
numerals, backlit for use in
poor light conditions.

Backlight is selectable on/off/auto
(illuminates only when taking a
measurement).

Measurements displayed in
inches, inches/microsecond,
millimeters, and meters/second.

Bar graph indicates stability
of reading.

Internal Data Logger (MMX-6DL only)

Automatic numeric Data Logging sys-
tem 1 to 1000 readings.

OBST indicates no reading.

Certification

Factory calibration traceable to
national standards.

Warranty

5 year limited.

Measuring

Range:

Pulse-Echo Mode (Pit & Flaw Detection)
measures from 0.025 to 19.999 inches
(0.63 to 500 millimeters).

Echo-Echo Mode (Through Paint &
Coatings) measures from 0.1 to 1 inch
(2.54 to 25.4 millimeters). Extended
range modification available on request:
.2 to 4 inch (5 to 100 mm).

Switch to select English or Metric units.

Resolution:

0.001 inch (0.01 millimeter)

Velocity Range:

0.0492 to .3937 in./μs.
(1250 to 10,000 meters/second)

Built in:

Stainless steel reference disk for probe
zeroing.

Four readings per second for single
point measurements or 16 per second in
Scan Mode—captures the minimum
thickness.

Single and two point calibration option
included.

Features

Multi-Mode:

Toggle between Pit & Flaw Detection
(Pulse Echo Mode), and Through Paint
& Coatings (Echo-Echo Mode) with the
single press of a button.

Alarm Mode:

Enter a minimum acceptable thickness
value. If measurement falls below mini-
mum, red LED will illuminate and sound
beeper. If measurement is above mini-
mum value, green LED will illuminate.

Data Output:

RS232 output sends data to a serial
printer, a computer or other external
storage device.



M500 PORTABLE METALLURGICAL MICROSCOPE



Description

The M500 is a self-contained portable metallurgical microscope that is ideal for use in the laboratory as well as in-situ examination. With its compact design and unique magnetic stand, the M500 can be attached to the curved surface of ferrous material at a range of angles to the horizontal as well as to a flat surface. A polished and etched surface area can be viewed with this instrument at magnifications up to 1500X, and the M500 can be used with a digital camera or CCD image process system to download the image to a PC for data transfer, analysis, storage or printout.

Features

- Compact design facilitates in-situ metallographic inspection of large or heavy items.
- Magnetic stand may be attached to ferrous materials at desired angle to the horizontal.
- X- and Y-axis slide movement allow careful examination of area of interest.
- Essentially nondestructive metallographic examination; no cutting of specimens.
- Easily adapted for microphotography.
- Economically priced.

Specifications

Total magnification:	100 to 500X (extendable to 1500X) Illuminator (halide): 6 volt, 15 watt
Eyepiece magnification:	10X, 12.5X (extendable to 15X) Power supply: 120 VAC, 60 Hz
Objective magnification:	10X, 40X (extendable to 100X) Stand: on-off magnetic base
Photo objective:	15X Size: 210 x 160 x 95 mm

Slide movement:	X-direction: 15 mm, Y-direction: 12 mm
Weight:	2.5 kg

Standard Package

- Main microscope body
- Two eyepieces: 10X, 12.5X
- Two objectives: 10X, 40X
- Illuminator
- Power supply
- Carrying case

Optional accessories

Battery for portable use
Stand for small
Adaptor for Canon digital camera
Eyepieces: 5X, 15X
Objectives: 4X, 20X, 80X, 100X
Spare bulb
Mini grinder
Electrolytic polisher

H4000 PORTABLE HARDNESS TESTER



Description:

The H4000 Portable Hardness Tester is a rebound device capable of measuring the hardness of a variety of metals and alloys with either flat or round surfaces. This instrument has an easy-to-read digital LCD display, memory function (storage capacity: 999 readings) and readily interchangeable impact probes

While obtaining data at the test site, the built-in printer can be actuated to obtain a printout, or the unit can be connected to a computer to analyze and/or print data as desired. Leeb's hardness numbers can be automatically converted to HLD, HRC, HRB, HB, HV, and HS for a menu of selected metals and alloys.

An optional program is available for producing and adding to the menu custom conversions for other metals and alloys of the customer's choosing.

Features:

- Menu operation
- Large LCD display with back-light
- High accuracy
- Automatic mean value display
- Accommodation for all impact devices:D,DC,D+15,G,C, DL, E;
no recalibration required
- Display of hardness values in HL,HRC,HRB,HB, HV & HS
- Testing can be performed at any angle
- Integral micro-printer
- USB interface to PC
- Conforms to ASTM A956
- Optional software for adding custom hardness info

Technical Specifications:

Hardness scale	HL, HRC, HRB, HB, HV and HS convertible
Impact devices	D (standard), DL, DC, D+15, C, G (optional)
Accuracy	±0.5 %
Display	320 x 240 matrix LCD display with back light
Printer	Built-in printer
Statistics function	Average / Max. / Min. value calculation Limits setting and alarm
Memory	999 data
Output	USB connection
Maximum hardness value	999HV (Impact device D/DC/DL/D+15/C) 68HRC (Impact device D/DC/DL/D+15/C) 680HB (Impact device G)
Minimum sample weight	2kg on solid support / 0.2kg with couplant paste
Minimum thickness coupled	5 mm (Impact device D/DC/DL/D+15) 3 mm (Impact device C) 10 mm (Impact device G)
Battery indicator	Battery low indication
Power supply	4 AA rechargeable batteries
Charger	6 V D.C. 1000mA
Charging time	2 hours
Operating temperature	-20°C to 40 ° C
Dimensions	215 mm×145 mm×46 mm
Weight	600g

Standard package:

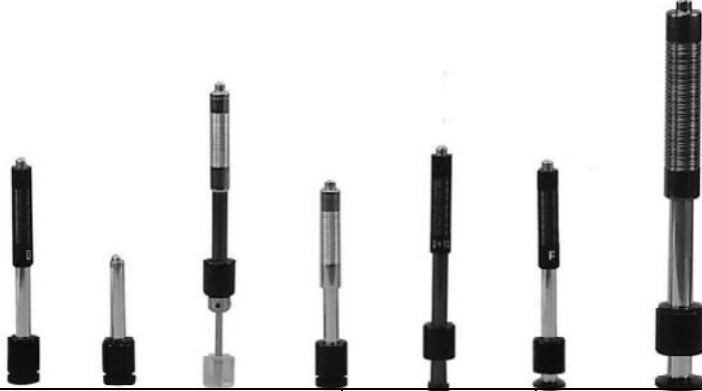
H4000 main processor with built-in micro-printer
Impact device D
LD test block
Calibration certificate
Software with USB communication cable
Rechargeable battery pack with charger
Cleaning brush
Instruction manual and carrying case

Optional accessories:

Support rings for curved surfaces
Impact device DC, C, D+15, G, DL
Program for custom alloy/hardness conversions

Impact Devices

D DC DL C D+15 E G



Impact device	D/DC/DL	D+15	C	G	E
Impacting energy	11 Nmm	11Nmm	2.7Nmm	90Nmm	11Nmm
Mass of impacting body	5.5g/5.5g/7.3g	7.8g	3.0g	20g	5.5g
Hardness of spherical test tip	1600HV	1600HV	1600HV	1600HV	5000HV
Diameter of spherical test tip	3mm	3mm	3mm	5mm	3mm
Material of spherical test tip	Tungsten carbide	Tungsten carbide	Tungsten carbide	Tungsten carbide	Diamond
Diameter of impact device	20mm	20mm	20mm	30mm	20mm
Length of impact device	147/86mm/202mm	162mm	141mm	254mm	155mm
Weight of impact device	75/50g	80g	75g	250g	80g
Max. hardness of the test piece	940/940/950 HV	940HV	1000HV	650HB	1200HV
Average surface roughness of the test piece	Ra :2μm	Ra :2μm	Ra :0.4μm	Ra :7μm	Ra :2μm
Min. weight of test piece					
Direct measuring	5kg	5kg	1.5kg	15kg	5kg
Stable support	2kg	2kg	0.5kg	5kg	2kg
Compact coupling	0.1kg	0.1kg	0.02kg	0.5kg	0.1kg
Min. thickness of test piece					
Compact coupling	3mm	3mm	1mm	10mm	3mm
Min. case hardened depth	0.8mm	0.8mm	0.2mm	1.2mm	0.8mm

Applications for Special Impact Devices:

Application:	
Holes, Bores	DC
Grooves,	D+15
Reduced energy (25%), Thin materials	C
Enlarged test tip and increased energy. Low demands on measuring surface finish. For Castings (GC Iron, NC Iron etc.) only.	G
Extremely confined spaces, the base of grooves and of special components such as gear wheels.	DL

H2000 PORTABLE HARDNESS TESTER



Description:

The H2000 is an advanced Leeb's-type hand-held digital metal hardness tester with high accuracy, wide measuring range and easy operation. It is suitable for testing the hardness of many metals and alloys and is especially useful for on-site testing of large structures or assembled components. Leeb's-type rebound hardness testers are widely used in manufacturing plants, testing laboratories and engineering companies.

Features:

- Menu operation
- Large LCD display with back-light
- High accuracy
- Automatic mean-value display
- Accommodation for all impact devices:D,DC,D+15,G,C, DL, E;
no recalibration required
- Display of hardness values in HL,HRC,HRB,HB, HV &HS
- Testing can be performed at any angle
- Output to PC or micro-printer
- Conforms to ASTM A956

Technical specifications:

Hardness scale	HL, HRC, HRB, HB, HV and HS convertable
Impact devices	D (standard); D, DC, D+15, C, G (optional)
Accuracy	± 0.5 %
Display	LCD display with back light
Statistics function	Average / Max. / Min. value calculation Limits setting and alarm
Data storage with Output	Data view software & RS232 cable
Maximum hardness value	999HV (Impact device D/DC/DL/D+15/C) 68HRC (Impact device D/DC/DL/D+15/C) 680HB (Impact device G)
Minimum sample weight	2kg on solid support / 0.2kg with couplant paste
Minimum thickness coupled	5 mm (Impact device D/DC/DL/D+15) 3 mm (Impact device C) 10 mm (Impact device G)
Battery indicator	Battery low indication
Power supply	2 AAA batteries
Operating temperature	-20°C to 40 ° C
Dimensions	108mm × 62mm × 25mm
Weight	180g

Standard package:

H2000 main processor
Impact device D
LD test block
Calibration Certificate
Leather pouch
Software with connection cable
Battery pack and cleaning brush
Instruction manual and carrying case

Optional accessories:

Micro printer
Support rings for curved surfaces
Impact device DC, C, D+15, G, DL

H1800 Portable Hardness Tester



The H1800 Integrated Hardness Tester utilizes state-of-the-art micro-electronic technology. This uniquely designed pocket-size instrument incorporates an impact probe, microprocessor and data display in a single, compact unit.

The principal new features of the H1800 include data display with statistics, enlarged storage capacity, USB interface for both recharging as well as data transfer to your PC or printer, backlight display for use in dark areas, and much more.

The H1800 conforms to ASTM A956 and provides exceptional reliability for a wide measuring range, and is capable of automatically converting into and displaying measurements as Brinell, Rockwell, Leebs, Vickers and Shore hardness values.

Typical applications

- Testing of large and/or heavy components, including installed machine parts and components.
- Testing of products during manufacture, especially mass produced components.
- Testing of items and materials in warehouses or stores for material identification.
- Testing of materials and components located in difficult to access or confined spaces.

Technical Data

- Measuring accuracy: +/- 0.5%
- Impact device: Model D
- Hardness measurement values include HRC, HRB, HRA, HB, HV, HS and HLD
- Automatic calculation of average and mean test values
- Storage capacity: 1250
- USB 2.0 interface
- Impact direction: any angle
- Impact energy: 8 ft-lbs (11Nmm)
- Test tip: Tungsten Carbide
- Dimensions: 158 x 41 x 26 mm
- Weight: 120g
- Operating temperature: 0°C - 50°C

Standard package

- Processor integrated with impact device D
- Calibration certificate
- Standard test block
- Software
- USB cord
- Battery charger
- Support ring
- Cleaning brush
- Carrying case

Measuring range:

Materials	HL	HRC	HRB	HB		HS	HV
				30D ²	10D ²		
ST & CAST ST	300~900	20.0~68.0	38.4~99.5	80~647		32.5~99.5	80~940
CWT STEEL	300~940	20.4~67.1	46.5~100.7				80~898
STAINLESS	300~800	19.6~62.4		85~656			85~802
GC IRON	360~650			90~334			
NC IRON	400~660			131~367			
CAST ALUM	174~560				20~190		
BRASS	200~550		13.5~95.3		40~173		
BRONZES	300~700				60~290		
COPPER	200~690				45~315		

GLOSS METERS: PG SERIES



Features:

- Small and light, easy to use
- Gloss measurement of paint, coatings, plastics, ceramics and metal surfaces.
- Auto calibration
- Auto range (0 to 99.9, 100 to 2000 Gu)
- Statistics – Mode
- USB data transfer
- Available single degree gloss meters: 20 °, 45 °, 60 °, 60 °curve, 75 ° and 85°
- Conform to DIN 67530, ISO2813, ASTM D 523

Specification

	PG 60	PGM Tri-gloss		
Incidence Angle	60°	20°	60°	85°
Auto Range (Gu)	0-99.9, 100-1000	0-99.9	0-99.9	0-99.9
		100-2000	100-1000	100-160
Repeatability (Gu)	0.2(0-99), 0.2% (100-2000)			
Reproducibility (Gu)	0.5 (0-99), 0.5% (100-2000)			
Resolution (Gu)	0.1			
Output	USB			
Power	1.5 V AA battery; can be used for 60 hours			
Dimension (mm)	114X 32X64	143 X 32 X 64		
Weight (g)	280	390		

Standard Delivery:

- Gloss Meter
- Black Crystal Board & White Ceramics Board
- USB Cable and Software
- Lens Cloth
- Calibration Certificate
- User's Manual
- Carrying Case

Model	Features
PG 60 deg single	Paint / Coating / Printing Auto calibration Auto measuring range (0 – 99.9, 100 – 1000 Gu) Statistics model Data logging with analysis Software with USB communication cable Conforms to ASTM D 523, ISO 2813, DIN 67530
PGM Tri-gloss (20 deg, 60 deg and 85 deg)	For High, Semi and Low gloss on all Paint / Coating / Printing Menu driven, LDC display with backlight Auto calibration for all three angles Auto measuring range: 20 deg: 0 – 99.9, 100 – 2000 Gu 60 deg: 0 – 99.9, 100 – 1000 Gu 85 deg: 0 – 99.9, 100 – 160 Gu Statistics model Data logging with analysis Software with USB communication cable Conforms to ASTM D 523, ISO 2813, DIN 67530
PG 45 deg single	Plastic and Film Auto calibration Auto measuring range (0 – 99.9, 100 – 1000 Gu) Statistics model Data logging with analysis Software with USB communication cable Conforms to ASTM D 523, ISO 2813, DIN 67530
PG 75 deg single	Paper Auto calibration Auto measuring range (0 – 99.9, 100 – 1000 Gu) Statistics model Data logging with analysis Software with USB communication cable Conforms to ASTM D 523, ISO 2813, DIN 67530
PG 20 deg single	High gloss on Paint / Coating / Printing Auto calibration Auto measuring range (0 – 99.9, 100 – 2000 Gu) Statistics model Data logging with analysis Software with USB communication cable Conforms to ASTM D 523, ISO 2813, DIN 67530
PG 85 deg single	Low gloss on Paint / Coating / Printing Auto calibration Auto measuring range (0 – 99.9, 100 – 160 Gu) Statistics model Data logging with analysis Software with USB communication cable Conforms to ASTM D 523, ISO 2813, DIN 67530

Digital Ultrasonic Flaw Detector FD580



Features:

- Automatic transducer calibration, zero offset and/or velocity
- Automatic gain control, peak hold and peak memory
- Automatic display of precise flaw location
- Ten independent setups; any criterion can be input freely, no test block required for proceeding
- Manual B-Scan
- High-speed capture and very low noise
- Two gate settings and alarm indication
- Automatic generation of DAC and AVG curves
- Display-freeze capability
- Angles and K-values may be inputted
- Lock/unlock system parameters
- Auto power-off and screen savers
- Electronic clock calendar
- Solid metal housing
- High contrast viewing of the waveform from bright, direct sunlight to complete darkness and easy to read from all angles
- Large memory of 300 A-Scan waveforms and 30,000 thickness values.
- RS232 communication interface ; reports **may** be exported to Excel
- Powerful embedded software which can be online-updated
- Li battery

Specifications:

Function	Technical Data
Scanning	<p>Range: 2.5mm to 10,000mm</p> <p>Stage: 2.5, 5, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 150, 200, 250, 300, 350, 400, 450, 500, 600, 700, 800, 900, 1,000, 2,000, 3,000, 4,000, 5,000, 6,000, 7,000, 8,000, 9,000 and 10,000mm</p> <p>Step: 0.1mm (from 2.5 mm to 99.9mm), 1mm (from 100mm to 10,000mm)</p>
Display delay	<p>D-delay range: -20 to +3400μs</p> <p>Stage: -20, -10, 0.0, 10, 20, 50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 600, 700, 800, 900, 1,000, 1,500, 2,000, 2,500, 3,000 and 3,400μs.</p> <p>Step: 0.1μs (from -20μs to +999.9μs), 1μs (from 1,000μs to 3,400μs)</p>
Probe delay	<p>P-delay range: 0.0 to 99.99μs</p> <p>Step: 0.01μs</p>
Sound velocity in material	<p>Sound velocity range: 1,000 to 9,999m/s</p> <p>Seven fixed velocities or stages: 2,260, 2,730, 3,080, 3,230, 4,700, 5,900 and 6,300</p> <p>Step: 1m/s</p>
Working methods	Single probe (P/R), dual probe (transceiver) or transmission probe
Frequency ranges	Low frequency: 0.2 to 1MHz, middle frequency: 0.5 to 4MHz, high frequency: 2 to 20MHz, three steps optional
Gain	<p>Range: 0 to 110dB</p> <p>Step: 0.0, 0.2, 0.5, 1, 2, 6 and, 12dB</p>
Linear suppression	0% to 80% of screen height, step: 1%
Vertical linear error	Less than 3%
Horizontal linear error	Less than 1% within scanning range
Detection sensitivity margin	≥ 60 dB
Dynamic scope	≥ 32 dB
Alarm	Traveling-wave alarm, evanescent-wave alarm

Monitoring gate	<p>Two gates represented by a horizontal thick line with adjustable start point, width and height.</p> <p>Starting point(mm): horizontal pixels from 0 to 208 with the display value relating to scanning range.</p> <p>Step(mm): quantity corresponding to one pixel (relating to scanning range)</p> <p>Width(mm): horizontal pixels from 4 to 212 with the display value relating to scanning range.</p> <p>Step(mm): quantity corresponding to one pixel (relating to scanning range)</p> <p>Height: vertical scale from 2% to 90%</p> <p>Step: 1%</p>
Display	<p>EL highlight dot matrix</p> <p>4 background colors available</p>
A-Scan display	<p>Full screen or part</p> <p>A-Scan display of freezing and unfreezing A-Scan image</p>
Wave display	All wave
Detecting channels	10
Data storage	<p>300 A-Scan waveforms (30 for each channel)</p> <p>30,000 thickness values (300 groups)</p>
Communication port with PC	RS232
Measuring Units	mm or in; time in μ s
Power adaptor	<p>Input: 100 to 240VAC @ 50 Hz to 60Hz</p> <p>Output: 9 to 12VDC @ 3 to 4A</p>
Power	Four 3.6V lithium batteries, 4,000mAh
Ambient temperature	0 to 40°C
Ambient humidity	20 to 90%RH
Interface	BNC
Dimensions of processor	240 × 173 × 50mm
Weight of processor	2.2kg